

Remarks

§102 Rejection of the Claims

Claims 1, 2, 6-10, 18, 24, and 27 were rejected under 35 U.S.C. 102(a) as being anticipated by Brooks et al. (US Pat. 6084297).

Independent claim 1 recites at least a metallization layer built up upon said die and said package core. Independent claims 24, 28, and 32 recite similar limitations. The Examiner reasoned that Brooks et al. disclosed a metallization layer built upon the die and the package core. (Office action at page 3). However, Applicant respectfully asserts that Brooks does not teach or suggest at least the limitation of the metallization layer being built up upon said die and said package core as recited in claim 1.

In general, Brooks is directed towards a ball grid array package for semiconductor die including a central cavity. (Abstract). In contrast to the limitation of claim 1, Brooks discloses the metallization layer as part of the base laminate. (Col. 5, Lines 35-53). In Brooks, the semiconductor die and adhesive layer do not form a continuous surface upon which a metallization layer can be built. (Fig. 2). Further, the adhesive layer is applied over the base laminate. (Col. 6, Lines 17-34). Accordingly, Brooks does not teach or suggest a metallization layer built up upon said die and said package core.

Thus, independent claim 1 is patentable over Brooks. Accordingly, independent claims 24, 28, and 32 are also patentable over Brooks.

Claims 2-18 depend from independent claim 1, claims 25-27, and 31 depend from independent claim 24, claims 29 and 30 depend from independent claim 28, and

claims 33-35 depend from independent claim 32. Based at least in part on their dependencies, 2-18, 25-27, 31, 29, 30, and 33-35 are also patentable over Brooks.

§103 Rejection of the Claims

Claim 3 was rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al. (US Pat 6084297) in view of Kelly et al. (US Pat. 5798567).

Claim 3, which depends from independent claim 1, is patentable over Brooks in view of Kelly for at least the reasons discussed above with respect to claim 1. In general, Kelly discloses an integrated circuit package which helps minimize the electromagnetic interference associated with an integrated circuit. Kelly does not teach or disclose at least the limitation of a metallization layer built up upon said die and said package core. Thus, Kelly does not cure the deficiencies of Brooks, and accordingly, claim 3 is patentable over Brooks in view of Kelly.

Claims 4, 32, and 35 were rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al. (US Pat 6084297) in view of Sylvester (US Pat. 6014317).

Claim 4, which depends from independent claim 1, independent claim 32, and claim 35, which depends from claim 32, are patentable over Brooks in view of Sylvester for at least the reasons discussed above with respect to claims 1 and 32. In general, Sylvester discloses a chip package that controls warp in electronic assemblies. Sylvester does not teach or disclose at least the limitation of a metallization layer built up upon said die and said package core. Thus, Sylvester does not cure the deficiencies

of Brooks, and accordingly, claims 4, 32, and 35 are patentable over Brooks in view of Sylvester.

Claims 11-17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al. (US Pat 6084297) in view of Harada et al. (US Pat. 5523622).

Claims 11-17, which depend from independent claim 1, are patentable over Brooks in view of Harada for at least the reasons discussed above with respect to claim 1. In general, Harada discloses an integrated circuit device where signal transmission lines on a main surface of the package are extended from just under pads on the chip to the outer portion of the package substrate. Harada does not teach or disclose at least the limitation of a metallization layer built up upon said die and said package core. Thus, Harada does not cure the deficiencies of Brooks, and accordingly, claims 11-17 are patentable over Brooks in view of Harada.

Claim 25 was rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al. (US Pat 6084297) in view of Taniguchi et al. (US Pat. 6388333).

Claim 25, which depends from independent claim 24, is patentable over Brooks in view of Taniguchi for at least the reasons discussed above with respect to claim 24. In general, Taniguchi discloses a plurality of semiconductor devices mounted on a mounting board in a three-dimensional structure. Taniguchi does not teach or disclose at least the limitation of a metallization layer built up upon said die and said package core. Thus, Taniguchi does not cure the deficiencies of Brooks, and accordingly, claim 25 is patentable over Brooks in view of Taniguchi.

Claim 26 was rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al. (US Pat 6084297) in view of Blish II, et al. (US Pat. 6049465).

Claim 26, which depends from independent claim 24, is patentable over Brooks in view of Blish II for at least the reasons discussed above with respect to claim 24. In general, Blish II discloses a microprocessor package with a microprocessor, having decoupling capacitors and cache circuitry on a first side and logic circuitry on a second side. Blish II does not teach or disclose at least the limitation of a metallization layer built up upon said die and said package core. Thus, Blish II does not cure the deficiencies of Brooks, and accordingly, claim 26 is patentable over Brooks in view of Blish II.

Claim 33 was rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al. (US Pat 6084297) and Sylvester (US Pat. 6014317) as applied to claim 32 and further in view of Kelly et al. (US Pat. 5798567).

Claim 33, which depends from independent claim 32, is patentable over Brooks and Sylvester in view of Kelly for at least the reasons discussed above with respect to claim 32. As discussed above, neither Sylvester nor Kelly cure the deficiencies of Brooks. Accordingly, claim 33 is patentable over Brooks and Sylvester in view of Kelly.

Claims 5 and 28-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al. (US Pat 6084297) in view of Degani et al. (US Pat. 5608262) and further in view of Kelly et al. (US Pat 5798567) and Harada et al. (US Pat. 5523622).

Claim 5, which depends from independent claim 1, independent claim 28, claims 29 and 30, which depend from independent claim 29, and claim 31, which depends from independent claim 24 are patentable over Brooks in view of Degani and further in view of Kelly and Harada for at least the reasons discussed above. In general, Degani discloses a packaging of MCM tiles without wire-bond interconnections and at least one

chip flip-chip mounted on the substrate. Degani does not teach or disclose at least the limitation of a metallization layer built up upon said die and said package core. Thus, Degani does not cure the deficiencies of Brooks. As discussed above, neither Kelly nor Harada cure the deficiencies of Brooks. Accordingly, claims 5 and 28-31 are patentable over Brooks in view of Degani and further in view of Kelly and Harada.

Claim 34 was rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al. (US Pat 6084297) and Sylvester (US Pat 6014317) as applied to claim 32, and further in view of Degani et al. (US Pat 5608262) and Kelly et al. (US Pat. 5798567).

Claim 34, which depends from independent claim 32, is patentable over Brooks and Sylvester further in view of Degani and Kelly for at least the reasons discussed above with respect to claim 32. As discussed above, neither Sylvester nor Degani nor Kelly cure the deficiencies of Brooks. Accordingly, claim 34 is patentable over Brooks and Sylvester and further in view of Degani and Kelly.

Conclusion:

Applicant respectfully submits that claims 1-18 and 24-35 are patentable, and accordingly, the application is now in condition for allowance. Early issuance of the Notice of Allowance is respectfully requested.

Attorney Docket Number and Correspondence Address

Please note for the record that the Attorney Docket Number has been changed from 884.409US1 to **P10665**.

Please note that the Correspondence Address for the present case should be as follows:

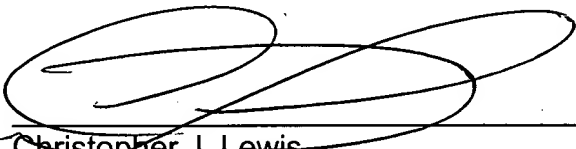
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Please update the record accordingly.

The Commissioner is hereby authorized to charge shortages or credit overpayments to Deposit Account No. 500393. A Fee Transmittal is enclosed in duplicate for fee processing purposes.

Respectfully submitted,
SCHWABE, WILLIAMSON & WYATT, P.C.

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